Functional Decline Secondary to Human T-Lymphotropic Virus Type I-Associated Myelopathy/Tropical Spastic Paraparesis Accelerated by Psychosocial Factors During the Coronavirus Pandemic: A Case Report

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Case Diagnosis

Human T-lymphotropic virus 1 (HTLV-1)-associated myelopathy/tropical spastic paraparesis (HAM/TSP)

Case Description

- 57-year-old female was brought to the emergency department for acute intentional benzodiazepine overdose.
- Four weeks prior, she developed worsening bilateral leg weakness with frequent falls, hypertonicity, urinary retention, and constipation.
- Past medical history was notable for major depression and recently diagnosed HAM/TSP about 10 months prior to this with similar symptoms for four months that improved with intravenous methylprednisolone and prednisone taper.
- Starting three months prior to this admission, her family became unable to secure steady job, food, medications, and physical therapy (closure) due to the COVID-19 pandemic.
- Considering herself a burden to her family, the patient took 11 tablets of 5 mg diazepam and was found somnolent by her family on the day of admission.

Physical Examination at the Emergency Room

- Weakness in bilateral hip flexion (3/5), right knee flexion (4/5), left knee flexion (3/5), and bilateral dorsiflexion (3/5).
- Upper extremity strength was 5/5 bilaterally.
- Increased tone throughout (right side more than left side).
- Positive Hoffman sign and hyperreflexia at knees bilaterally.
- Negative Babinski sign bilaterally.
- Cranial nerves, gross sensation, and rectal tone were intact.
- Patient was ambulatory but much more unsteady than previously documented exams.

Case Description (continued)

Laboratory Findings:

- Basic metabolic panel and complete blood count were within normal limits. Serum toxicology was negative.

Image Findings

- X ray of chest and pelvis were normal.
- Computed tomography (CT) of the head showed no acute abnormalities.
- Magnetic resonance image (MRI) of the cervical, thoracic, and lumbar spine showed chronic changes including multilevel cervical and lumbar degenerative disc changes without severe narrowing or cord compression.

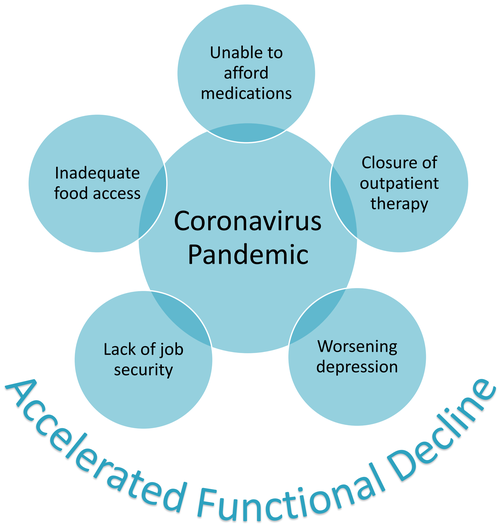
Intervention

- She was placed on Section 12(a) in the emergency room and admitted to the neurology floor for management.
- Given the negative work-up, her worsening condition was thought to be exacerbated by many psychosocial issues.
- On hospital day 9, she was discharged to acute inpatient rehabilitation facility with psychosocial support.
- **Bilateral leg weakness**: eventually improved with physical and occupation therapy, nutrition, and use of pregabalin.
- **Hypertonicity**: diazepam was discontinued given the overdose but she declined new medications due to concern for side effects.
- **Urinary retention**: continued tamsulosin while oxybutynin was switched to bethanechol with improved effect.
- **Constipation**: improved with daily bowel regimen.
- **Depression and anorexia**: on buspirone, duloxetine, and dronabinol with consults from psychiatry and psychology.
- **Disposition**: She denied any more suicidal ideations and was discharged to home after two weeks of rehabilitation.

Follow Up (3 months after initial hospital admission)

- Completed 2 months of home physical therapy and was discharged with a home exercise program.
- Patient was at a new lower baseline and had limitations in endurance, balance, and mobility, requiring supervision with the use of rolling walker and wheelchair.
- Endorsed feeling depressed about her medical condition.
- Will continue to follow up with a multidisciplinary team including social work, neurology, internal medicine, nutrition, ophthalmology, psychiatry, and psychology.

Figure. The social determinants of health for our patient with HAM/TSP during the Coronavirus pandemic.



Discussion

- HAM/TSP is a rare chronic myelitis causing insidious leg weakness, spasticity, hyperreflexia, urinary and bowel symptoms, uveitis, and minor sensory changes.[1,2]
- There is no effective treatment for HAM/TSP and current therapeutic strategies focus on symptomatic management.[2]
- HAM/TSP generally leads to progressive functional decline in the areas of mobility, balance, and sphincter control.[2,3,4,5,7]
- Most patients become wheelchair confined over years.[2,3,4,7]
- Our patient had a faster deterioration likely fueled by social determinants of health during the pandemic (Figure).[2,3,6]
- The COVID-19 pandemic has created multiple unprecedented challenges especially for the poor living with illness.[6]

Conclusions

- HAM/TSP can cause physical impairment leading to long-term disability and serious functional limitations.[1,2,3,4,5,7]
- Disease progression could be accelerated by psychosocial factors, especially during the COVID-19 pandemic.[6]
- A multidisciplinary approach to rehabilitation is needed to help slow HAM/TSP's disability progression.

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